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2018

## Test 2200A: New Holland Workmaster 70

Nebraska Tractor Test Laboratory

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# NEBRASKA TRACTOR TEST 2200A

## NEW HOLLAND WORKMASTER 70 DIESEL

### 8 SPEED

#### POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—545 rpm)					
56.93 (42.46)	2599	4.41 (16.71)	0.543 (0.330)	12.90 (2.54)	Fuel used during active exhaust regeneration - na (see note 1 page 2)
Standard Power Take-off Speed(540 rpm)					
56.33 (42.01)	2576	4.33 (16.38)	0.538 (0.327)	13.01 (2.56)	

#### VARYING POWER AND FUEL CONSUMPTION

56.93 (42.46)	2599	4.41 (16.71)	0.543 (0.330)	12.90 (2.54)	Air temperature
49.44 (36.87)	2652	4.03 (15.27)	0.571 (0.347)	12.25 (2.41)	72°F (22°C)
37.41 (27.89)	2676	3.35 (12.68)	0.627 (0.381)	11.16 (2.20)	Relative humidity
25.06 (18.69)	2697	2.62 (9.93)	0.733 (0.446)	9.55 (1.88)	66%
12.44 (9.28)	2712	2.00 (7.58)	1.127 (0.685)	6.21 (1.22)	Barometer
0.45 (0.34)	2722	1.45 (5.48)	22.332 (13.584)	0.31 (0.06)	28.69"Hg (97.14 kPa)

Maximum Torque - 155 lb.-ft. (211 Nm) at 1802 rpm  
Maximum Torque rise - 35.1%  
Torque rise at 2080 engine rpm - 23%

#### TRACTOR SOUND LEVEL WITHOUT CAB

	Front Wheel Drive Engaged	Disengaged
At no load in 3rd (L3) gear	92.5	92.6
Bystander in 8th (H4) gear		82.7

Horizontal distances of drawbar hitch point behind rear wheel axis - 27.6"(700 mm), 31.5"(800 mm)

#### TIRES AND WEIGHT

**Rear Tires**—No., size, ply & psi (kPa)  
**Front Tires**—No., size, ply & psi (kPa)  
**Height of Drawbar**  
**Static Weight with operator**—Rear  
— Front  
— Total

#### Tested Without Ballast

Two 18.4-24; 8:18 (125)  
Two 12.5/80-18; 10; 28 (195)  
18.0 in (455 mm)  
2895 lb (1313 kg)  
2175 lb (987 kg)  
5070 lb (2300 kg)

**Location of tests:** Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln Nebraska 68583-0832

**Dates of tests:** August 28 to September 5, 2018

**Manufacturer:** CNH Ind India Private LTD Plot No. 3, Udyog Kendra, Greater Noida India

**FUEL, OIL and TIME:** **Fuel** No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.8404 **Fuel weight** 6.998 lbs/gal (0.839 kg/l) **Oil** SAE 10W40 **API service classification** CJ-4 **Transmission and hydraulic lubricant** New Holland Ambra Multi G 134 fluid **Front axle lubricant** New Holland Ambra Multi G 134 fluid **Total time engine was operated** 7.5 hours

**ENGINE:** **Make** FCA Diesel **Type** three cylinder vertical with turbocharger and air to air intercooler **Serial No.** 50D01977 **Crankshaft** lengthwise **Rated engine speed** 2600 **Bore and stroke** 3.701" x 4.213" (94.0 mm x 107.0 mm) **Compression ratio** 17.5 to 1 **Displacement** 136 cu in (2228 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Fuel filter** one paper element **Fuel cooler** radiator for pump return fuel **Exhaust** regenerative aftertreatment system consisting of DOC (diesel oxidation catalyst) and DPF (diesel particulate filter) integrated within an underhood muffler with horizontal exhaust to the right side **Cooling medium temperature control** thermostat and variable speed fan

**ENGINE OPERATING PARAMETERS:** **Fuel rate:** 29.2 - 31.0 lb/h (13.2 - 14.1 kg/h) **High idle:** 2700 - 2800 rpm **Turbo boost:** nominal 16.0 - 18.9 psi (110 - 130 kPa) as measured 16.8 psi (116 kPa)

**CHASSIS:** **Type** front wheel assist **Serial No.** FR5328108 **Tread width** rear 56.5" (1435 mm) front 60.0" (1525 mm) **Wheelbase** 77.2" (1960 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph (km/h)** first 1.83 (2.94) second 2.75 (4.43) third 4.07 (6.55) fourth 5.60 (9.01) fifth 6.64 (10.68) sixth 10.00 (16.09) seventh 14.76 (23.75) eighth 20.31 (32.68) reverse 1.93 (3.11), 2.91 (4.69), 4.30 (6.92), 5.92 (9.52), 7.02 (11.29), 10.56 (17.00), 15.60 (25.10), 21.46 (34.53) **Clutch** single dry disc operated by foot pedal **Brakes** single wet disc operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2575 engine rpm **Unladen tractor mass** 4895 lb (2220 kg)

## HYDRAULIC PERFORMANCE

CATEGORY: II

Quick Attach: None

OECD Static test

Maximum force exerted through whole range: 2705 lbs (12.0 kN)(at frame)  
3608 lbs (16.0 kN)(at link ends)

**two outlet sets combined**

i) Sustained pressure of the open relief valve: 2577 psi (178 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed: 11.2 GPM (42.3 l/min)

iii) Pump delivery rate at maximum hydraulic power: 10.9 GPM (41.2 l/min)

Delivery pressure: 2013 psi (139 bar)

Power: 12.8 HP (9.5 kW)

**single outlet set**

ii) Pump delivery rate at minimum pressure and rated engine speed: 11.1 GPM (42.0 l/min)

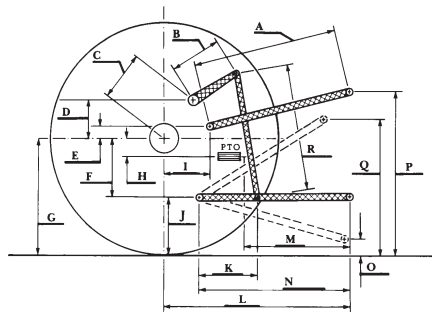
iii) Pump delivery rate at maximum hydraulic power: 11.0 GPM (41.6 l/min)

Delivery pressure: 1990 psi (137 bar)

Power: 12.7 HP (9.5 kW)

## HITCH DIMENSIONS AS TESTED - NO LOAD

	inch	mm
A	26.8	680
B	9.1	230
C	1.6	40
D	1.1	28
E	15.2	385
F	5.9	150
G	25.6	650
H	0.6	14
I	7.2	183
J	19.7	500
K	13.6	345
L	34.8	885
M	21.7	551
N	30.1	765
O	9.1	230
P	43.7	1110
Q	35.4	900
R	19.5	495



**REPAIRS AND ADJUSTMENTS:** No repairs or adjustments.

**NOTE 1:** The engine in this tractor has a automatic control for the regeneration process that could not be manually overridden. This test sequence was not done.

**NOTE 2:** The performance results on this report were obtained from tests carried out on the Case IH Farmall 70A Diesel.

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. This tractor fell 8.9% short of meeting the manufacturer's PTO power claim of 62.5 hp (46.0 kW) and 6.2% short of meeting the manufacturer's remote hydraulic flow claim of 11.9 GPM (45 lpm).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **2200A**, September 20, 2018.

Roger M. Hoy  
Director

M.F. Kocher  
P.J. Jasa  
J.D. Luck  
Board of Tractor Test Engineers

## RECOMMENDED CITATION FORMAT:

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**New Holland Workmaster 70 Diesel**

Institute of Agriculture and Natural Resources  
University of Nebraska-Lincoln